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African Cotton Markets at Crossroads

Will the Price Spike Turn into a New Kick-Start?

Claire Delpeuch

The World Bank
Poverty Reduction and Economic Management Network
International Trade Department
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Abstract

After years of diplomatic efforts and legal procedures to obtain the elimination of rich countries' cotton subsidies, policy prospects for African cotton producers remain bleak. However, the world price for cotton has doubled in a year and has hit an all-time high. This paper examines these developments and investigates their potential consequences for African smallholder farmers. It emphasizes the importance of price transmission to domestic markets; assesses the impact of the reforms undertaken in Sub-Saharan African cotton sectors on producers' supply responsiveness; and outlines

what remains to be done to ensure that farmers can benefit from a favorable global environment. The paper concludes that improving the functioning of domestic markets remains the priority in the short run. The current high price season will reveal the costs and benefits of different types of sector regulation systems and the capacity of policy-makers and sector stakeholders to deliver on promises. It also offers a last-minute opportunity to rich countries to keep their word in the context of the Doha Development Round.

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AFRICAN COTTON MARKETS AT CROSSROADS:
WILL THE PRICE SPIKE TURN INTO A NEW KICK-START?

Claire Delpeuch¹

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1. INTRODUCTION

In 2003, Benin, Burkina Faso, Chad and Mali launched a ‘Cotton Initiative’ during the negotiations of the World Trade Organization (WTO) in view of obtaining the elimination of rich countries’ cotton subsidies. Yet, with the stalling of the Doha Development Round (DDR), the efforts of the West and Central African (WCA) countries collectively known as the ‘Cotton Four’ (C-4) have gone unheeded. The year 2010 however offered promising perspectives on other fronts. First, the WTO case initiated by Brazil against the cotton support program of the United States (US) has been settled out of court after Brazil threatened to impose countermeasures estimated to over US\$ 800 million. Second, the world price for cotton has displayed unprecedented growth: it has doubled in the course of the year and has hit an all-time high by the beginning of 2011. This paper investigates the implications of these developments for sub-Saharan African (SSA) countries.

Consequences are potentially significant: cotton indeed provides cash to millions of rural households on the continent (Hussein et al., 2006).² It is also a major source of foreign currency (see figure 1) as it is one of the only agricultural exports for which the continent’s global market share has increased over the past decades (Boughton et al., 2003; Baffes, 2009b). In 2009, Burkina Faso and Benin ranked among the top-10 exporters and WCA countries together were the third biggest exporter after the United States and India (see figure 2). Being grown mainly by smallholders, cotton is thus believed to play a key role for development and poverty reduction in Africa (Badiane et al., 2002; Minot and Daniels, 2003; Moseley and Gray, 2008).

A number of factors influence African producers’ returns from growing cotton, in particular, the price they receive for their output, which in turns influences the amount of land, inputs and effort they invest in cotton production. Understanding the implications of recent global cotton market evolutions for African producers thus implies understanding how these changes impact producer prices at the domestic level. Key to this process is the regulation of domestic markets.

The key finding is that, after years of diplomatic efforts and legal procedures, relief for African cotton producers could come from the market. While this does not mean that the elimination of rich countries’ cotton subsidies should not be pursued anymore, on the contrary, it shifts priorities in the short run: the functioning of domestic markets has to be improved to ensure that small-holder producers can benefit from a favorable global environment. While this is easier said than done, reviewing the reforms processes already undertaken in a number of SSA countries allows pointing at the different challenges faced by different countries. The

² According to Kaminski et al. (2011), in 2006, “cotton farmers represented almost 1/6 of all rural households in Burkina Faso [...], making them the largest employment groups in the country.”

current high price season will reveal the costs and benefits of different types of sector regulation systems and the capacity of policy-makers and sector stakeholders to deliver on promises. It also offers a rare opportunity to African governments to deepen reform processes and to rich countries' governments to keep their word on a highly symbolic issue in the context of the DDR.

The rest of this paper proceeds as follows. Section two focuses on the international dimension: it analyses the evolution of the world price over the past decades (2.1) and the initiatives that have been undertaken by Brazil and by the C-4 to put an end to the policy distortions that are believed to depress it (2.2). Section three turns to the domestic dimension: it outlines the importance of price signal transmission to domestic markets (3.1) and describes the evolution of cotton market regulation across SSA (3.2). Finally, the fourth section looks at what remains to be done to improve the fate of African cotton producers and maximize poverty-reduction prospects in the perspective of the DDR and of the new G20 agenda.

2. THE INTERNATIONAL DIMENSION

2.1 What is at stake?

The evolution of the world price for cotton has been relatively unfavorable to producers over the past half century, much as the prices for other agricultural commodities. In addition to increased variability, the A-index, the most widely used reference price for cotton, has almost continuously declined (see figure 3).³ Between the early sixties and the early 2000s, it has fell by over 50 percent in real terms (Tschirley et al., 2009). Prices have not even increased in the late-2000s when the prices for food crops sky-rocketed.⁴ As mentioned in the introduction, this situation has eventually been reversed in 2010; this change is discussed below.

The long-term decline of the price for cotton is due primarily to three factors. First, per capita consumption has almost stagnated over the past fifty years. Per capita demand for textile has increased; however, this growth has been mitigated by a reduction of cotton's share in total fiber consumption to the benefit of man-made fibers (Ethridge, 2011).

Second, production costs have shrunk as yields have more than doubled, on average, since the early 1960s (Tschirley et al., 2009). Such productivity gains have resulted from increased use of fertilizers and irrigation and the introduction of improved varieties (Baffes, 2011). African countries, especially in WCA, participated to this trend: since the 1960s, yields were multiplied by three on average in the C-4, while annual production increased more than

³ The Cotlook A Index is compiled daily by Cotton Outlook as the average of the five lowest quotations of eighteen styles of cotton from a number of origins, including four SSA countries (for more details, see appendix A in Baffes, 2005).

⁴ Between 2003 and 2008, the prices of food crops doubled and those of fertilizers quadrupled (Baffes, 2011).

twenty-fold (Delpeuch et al., 2010). Besides, biotech adoption has accelerated this trend in some of the World's biggest cotton producing countries, notably India and China.⁵ According to Baffes (2011), the recent production boom resulting from this technological innovation would partly explain why the price for cotton has not followed other peaking commodity prices in recent years.⁶

A third aggravating factor, whose magnitude remains subject to debate, is policy intervention. Cotton production is indeed supported in various regions of the world, including in developing countries like China, India, Turkey or some countries of WCA. However, the most important trade-distorting interventions are believed to result from the support granted to American farmers.⁷ In the early 2000s, when Brazil initiated its complaint before the WTO and WCA countries launched their 'Cotton Initiative', US support to its cotton industry ranged between US\$ 2 and 4 billion annually, that is, up to almost one sixth of the global output value or more than the total value of exports from the C-4 (Baffes, 2011).

The impact of these subsidies on the world price has been estimated with numerous models and considerable variation in the results. According to Estur and Baffes (2009), averaging the findings of the studies available in 2009 suggested that the world price would have been 10 to 15 percent higher without support in the early 2000s.⁸ In addition, in a market with limited demand growth prospects, such subsidies also significantly matter in as much as they reduce the market shares of non-subsidized exporters. The prospect of gaining new market shares

⁵ Biotech adoption is perceived to be largely responsible for strong production growth in India and China, where it was of respectively 125 and 55 percent over the past decade (Baffes, 2011). In the late 2000s, it was estimated that about one quarter of the area allocated to cotton worldwide was planted with genetically modified varieties and that it accounted for almost 40 percent of global output (Tschorley et al., 2009). See Trip (2009) for a review of the literature on the pros and cons of biotech cotton adoption.

⁶ Additional factors explaining the specific trend of the price for cotton in recent years include the fact that cotton is not directly concerned by biofuel production, and the fact it reacts less to increases in energy costs than other commodity prices (Baffes, 2011).

⁷ According to Poonyth et al. (2004), the subsidies granted in US would impact the world price for cotton twice as much as those granted in the European Union, because of the US's greater role in world production and exports. Besides, subsidies in developing countries are believed to impact the world price negligibly given their amounts, except in China, where lack of reliable statistics however makes the evaluation difficult (Baffes, 2011). ICAC (2006) estimated cotton subsidies worldwide at US \$ 4,7 billion for 2004/2005, with 2,4 billion distributed in the US, 1,1 billion in China and 1 billion in the EU.

⁸ Among the most recent discussions of these figures, Pan et al. (2010) raise questions about the underlying assumption of a perfectly competitive world cotton market adopted in most models. Their concern builds on the observation of a growing concentration of cotton imports, particularly since the expiration of the multi-fibre agreement in 2005, with china accounting for 30 percent of total imports worldwide and imports controlled by several state-owned companies. According to them, China's tariff rate quota system could in fact grant it monopsony power. This would, in turn, mean the estimates of the effect of US subsidies on the world price are often overestimated, up to by 100 percent..

and benefiting from higher prices has motivated two unprecedented initiatives aimed at obtaining the elimination of distortive support.

2.2 The big issue: Correcting for unfair support

*The legal route: 'United States – Upland Cotton'*⁹

In September 2002, Brazil issued a complaint before the Dispute Settlement Body (DSB) of the WTO claiming that the US cotton support scheme lowered world prices and squeezed developing countries out of markets by allowing US growers exporting even when they were not competitive.¹⁰ Brazil argued that Brazilian producers lost market shares to Americans when the world price for cotton reached a low in 1999-2001 and claimed to be losing earnings of US\$ 1 billion a year, as a result of “significant price depression and price suppression” (WTO, 2002) caused by several US support payments and guarantees that it considered to be provided contrary to the provision of the WTO Agreement on Agriculture. Two key questions were therefore raised in the case: had the support mechanisms at stake caused “serious prejudice” to Brazil (WTO, 2002); and were they inconsistent with the commitments of the US at the WTO (Josling, 2005)? The resolution of this dispute has taken almost eight years (see box 1 for a detailed chronology).

In 2004 and 2005, the WTO DSB and the Appellate Body (AB) both ruled against the US and largely upheld the concerns expressed by Brazil, concluding that some of the US support measures examined were indeed in violation of WTO law and effectively depressed and suppressed cotton prices in Brazil, thus harming producers in this country. The first finding rested on the observation that the nature of some of the payments was not consistent with the category of support under which they were notified and that some of the amounts spent exceeded those allowed by different WTO provisions (Schnepf, 2010; Josling, 2005). The latter finding rested on four points (with implications for future cases). First, it was recognized that the US exerted a significant influence on the world cotton market in terms of production and exports. Second, subsidies were found to be directly linked to the world price and therefore to insulate American producers from world market conditions. Third, a temporal coincidence between the evolution of US subsidies and that of world prices was identified. Fourth, US producers' costs of production were found to exceed their incomes (Schnepf, 2010; Josling, 2005). As a result, the US was asked to withdraw these support programs or to remove their adverse effects within six months of the publication of the AB report.

⁹ This is the name under which the case is registered at the WTO.

¹⁰ Dispute settlement case DS267.

A year later, the case was taken to a Compliance Panel (CP) following a demand by Brazil on the grounds that the US had not complied with the recommendations of the AB. Again, Brazil's complaint was largely upheld and the WTO Arbitrator thus authorized Brazil to retaliate in August 2009. In practice, this meant that Brazil obtained the right to raise its tariffs or to use a waiver of intellectual property restrictions on a number of goods and services originating from the US. The Brazilian government accordingly announced that it would implement countermeasures that were evaluated to about US\$ 830 million, including about a third in cross-retaliation (ICTSD, 2010).¹¹ However, these measures were never put into practice. Indeed, the commercial threat they represented led the US to offer a support fund of about US\$ 150 million to finance technical assistance and capacity-building for Brazilian cotton farmers.¹² In addition, the US offered to cooperate with Brazil in view of eliminating all distortive support by 2012, when the Farm Bill will be renegotiated in congress.¹³ A framework agreement was thus signed in August 2010, in which Brazil agreed to suspend retaliation. In sum, eight years of legal procedures have offered Brazil the leverage necessary to convince the US to settle the issue by mutual consent.

It is hard to assess the consequences of this deal for African producers. First, the extent to which the US will withdraw its support in the next Farm Bill remains unknown. Second, Brazil has not yet announced how the US\$ 150 million support fund would be used. The framework agreement between Brazil and the US states that some of the fund's resources could be allocated to the assistance of other developing countries' cotton sectors. Yet, in a worst case scenario, African producers could in fact loose from the current arrangement if the support fund was to be allocated in distortionary ways to Brazilian producers thus adding to total distortions and outweighing potentially limited changes in US support. African, Caribbean and Pacific countries have already expressed their concern that the support offered to Brazilian producers "only serve to reinforce inequality in treatment and go against the interests of other producers" and deplored the "unprecedented and exceptional situation where a WTO Member is avoiding bringing its trade policy into compliance with its obligations towards the Organization in return for a payment made towards the producers of one other Member only" (ACP Group, 2011). For now, thus, African countries can only be said to have benefited symbolically from the '*United States – Upland Cotton*' dispute in as much as it has

¹¹ Cross-retaliation refers to the use of countermeasures in sectors outside of trade in goods (for example in the copyrights and patent sectors regulated by the TRIPS agreement).

¹² The full name of the document is "Framework agreement for a mutually agreed solution to the cotton dispute at the World Trade Organisation". The amount of the compensation fund "corresponds to WTO arbitration of the annual damage caused to the Brazilian economy by WTO-inconsistent domestic support programmes still maintained by the US" (ICTSD, sept. 2010: page 10).

¹³ In 2012, the broad agricultural policy of the US should be reformed as a new farm bill will be voted by the Congress.

contributed to raising the issue of cotton subsidies on the global political agenda. More substantial benefits in terms of price rise and market share remain to be seen in light of the 2012 US Farm Bill.

The diplomatic route: The 'Cotton Initiative'

One might wonder why WCA countries have not followed more closely the Brazilian legal route. Between 1999 and 2002, WCA saw its share in world cotton exports decline from about 10 to 8 percent, while that of the US increased from about 18 to 33 percent (UN Comtrade, 2010). The rationale for the Brazilian complaint could therefore have suited the WCA situation too. In fact, Benin and Chad have been involved in the Brazilian case, but only as third parties.¹⁴ Initiating a WTO procedure indeed has a cost that might be prohibitive for a large number of least developed countries (LDCs).¹⁵ The participation of Chad and Benin as third-parties was made possible by the involvement of NGOs: the countries benefited from *pro bono* legal support from two private law firms and economic expertise from an IFPRI researcher. However, financial support is not sufficient. The value of C-4 countries' imports from the US represents a very small share of the value of total American exports. Countermeasures would therefore not have offered a credible retaliation threat (Bown, 2009). Besides, as noted by Baffes (2011), WCA countries already impose high tariffs, notably for tax raising purposes. Increasing these tariffs would have had a non-negligible cost to their economies and could even have resulted in suppressing imports.

Instead of following the legal route, the C-4 thus took the diplomatic route and launched an offensive known as the 'Cotton Initiative'.¹⁶ Requests were first expressed in April 2003, during a Special Session of the WTO Committee on Agriculture of the Cancun Trade Ministerial Conference. Three demands were voiced: a reduction of Western production and export support schemes and their progressive elimination over three years; temporary financial compensation for the losses incurred by cotton producing LDCs as long as the subsidies would remain; and the creation of a mechanism for the control and elimination of support measures operated under the supervision of the WTO.

The design of the Initiative has very much been led, or at least supported, by a trio of NGOs. Building on the dispute initiated by Brazil, the IDEAS Centre, Oxfam International and

¹⁴ The thirteen third parties were: Argentina; Australia; Benin; Canada; Chad; China; Chinese Taipei; European Union; India; New Zealand; Pakistan; Paraguay; Venezuela; Japan; Thailand

¹⁵ As reported by Bown (2009: page 128): the evidence produced by Brazil has involved "technical economic studies generated by high-cost economic consultants with professional expertise that assess the market impact of agricultural subsidy policies."

¹⁶ Its full name is 'Sectoral Initiative in favour of Cotton'.

ICTSD worked hand in hand with governments and producer associations to engage in the debate (Eagleton-Pierce, forthcoming). The strategy consisted in bringing high profile personalities to appear in the media and to make their case in WTO instances. The Burkinabe President, Blaise Compaoré, for example addressed the General Council himself in June 2003. According to Zunckel (2005: page 1079), this unusual intervention “succeeded in elevating cotton into a fully fledged negotiating item in the Doha negotiations” (see box 2 for a detailed chronology of the Initiative). The cotton issue was also addressed in an “impressive list of op-eds and articles placed in major newspapers and other media outlets” following Oxfam’s strategy “to use the media to convince the American public that its own government’s policies were harming already poor farmers in West Africa” (Bown, 2009: page 195).¹⁷ The story indeed had a great drama potential: billions of dollars of subsidies were offered to a few thousand wealthy farmers to the detriments of some of the poorest countries in the world (Zunckel, 2005; Oxfam, 2002).¹⁸ In the framework of a Development round, the story offered a key opportunity to prove that the organization could deliver development-friendly outcomes and give a voice to poor countries. According to Eagleton-Pierce (forthcoming), the most powerful side of the story consisted in the rules-based claims of the C-4, which contrasted with usual claims for development assistance: highly competitive African producers were simply asking for the application of the WTO Agreements.¹⁹

However, the issue quickly became broader than that. Following the Cancun Ministerial, and under the impulse of the US delegation, it was decided that the cotton issue raised by the C-4 would be dealt with through two processes: its trade dimension would be discussed during the DDR but its development dimension would be addressed by the development community, that is, international financial institutions, bilateral donors and NGOs.²⁰ To Eagleton-Pierce (forthcoming), this distinction somehow allowed the opponents to the Initiative stretching the agenda towards the development dimension of the issue, making the resolution of the trade dimension only a secondary objective and relieving the pressure on the US. Hence, while the text of the ‘July Package’ (WTO, 2004) stated that the cotton issue would be dealt with “ambitiously, expeditiously and specifically”, as of February 2011, this has not happened.

¹⁷ Many of these articles related the conclusions of a widely circulated Oxfam report entitled ‘Cultivating Poverty: The Impact of US Cotton Subsidies on Africa’ (OXFAM 2002).

¹⁸ Thus suggesting that developing countries cannot afford similar levels of support, all the more that they are under pressure to reduce distortions to agricultural incentives to benefit from the loans or aid programs of International Financial Institutions (IFIs) such as the WB or the IMF.

¹⁹ According to Oxfam (2002), African cotton is up to three times as competitive as American cotton, once subsidies are netted out. This follows from the low cost of labour and the high quality of the fibre, because of the favourable tropical environment and because it is handpicked.

²⁰ This distinction somehow built on the fact that the C-4 asked not only for the abolition of US distortive support but also for compensation, an unusual thing to do in the WTO. This second demand probably aimed to appeal to domestic constituents.

The cotton issue remains mixed up in the negotiations, subject to the bigger battle on agricultural support.²¹ Additional possible reasons of this failure include the political sensitiveness of agricultural policy reform in the US in general and the potentially wrong timing of Oxfam's media campaign, which was led a time when (i) the farm bill was not being debated in Congress and (ii) the WTO DSB had not yet established that the US was in violation of its obligations (Bown, 2009). The fact that, even during a self-declared 'Development Round', the Cotton Initiative has had so little success is however certainly disappointing.

Epilogue: Deus ex Machina

The unusual resolution of the 'US-Upland Cotton' case and the impasse in which the Cotton Initiative is stuck create a number of precedents and shed mitigated light on the opportunities that the international trade negotiation arena offers to developing countries.

On the one hand, the outcome of the Brazilian complaint signs the unique victory of a developing country before the DSB with important implications in terms of clarifying how WTO rules can be applied to agricultural subsidies (Josling, 2005) and how cross-retaliation can be used (Bown, 2009). Whilst long, the legal procedure initiated by Brazil proved to be quicker and more successful than the diplomatic initiative.²² Somehow ironically, while Brazil was initially only pursuing the elimination of US subsidies, it in fact obtained what the C-4 was asking for: financial compensation. This suggests that turning a precise question into a technical one prevents it from being subject to request and offer or cross-issue linkages.

The Cotton Initiative has also shown that with the help of various non-governmental institutions, poor countries can have a voice on the international scene and impact the outcomes of trade negotiations to a certain extent: the failure to reach an agreement on the cotton issue is seen by some analysts as one of the main factors behind the stalling of

²¹ It is beyond the scope of this paper to investigate the reasons of this failure. Besides the non cotton-specific difficulties to reach an agreement in the Doha round, Bown (2009) stresses the political sensitiveness of agricultural policy reform in the US in general and the potentially wrong timing of Oxfam's media campaign, which was led a time when (i) the farm bill was not being debated in Congress and (ii) the WTO DSB had not yet established that the US was in violation of its obligations.

²² As put by Zunckel (2005), "dispute settlement gives Members the option of taking ownership of agricultural reform in the sense that a dispute can be initiated and pursued unilaterally without the necessary, but time consuming, consensus building process required by the wider milieu of the Doha Development Agenda negotiations" (p. 1072).

negotiations in Cancun and their slow pace since then (Eagleton-Pierce, forthcoming; Bown, 2009; Heinisch, 2006).²³

On the other hand, these two initiatives also underline some of the limits of the dispute settlement system. Indeed, they point at the importance of trade leverage to obtain compliance from the faulty party in a system that rests on the authorization of countermeasures and show how, alternatively resolving disputes through financial compensation, is likely to have adverse side-effects on third parties, unless the funds are used in non-distortionary ways (Baffes, 2011).

Despite these policy shortcomings, however, relief for African cotton producers could come from the market: the world price for cotton has dramatically risen over the past few months (see figure 3). The extent of this price spike is even far greater than what was expected from a removal of American subsidies: while it was anticipated that the abolition of distortionary support would raise prices by 10 to 15 percent at most, the average A index during the six first months of the 2010/11 season was 80 percent higher than the 2009/10 season average (ICAC, 2011). As of February 2011, it is still on the rise and hits all-time highs (World Bank, 2011). This unprecedented increase is attributed to the low levels of stocks worldwide; the limited supply that resulted from floods in Brazil, China, India and Pakistan; a recovery of demand resulting from the improvement in the global economic environment; the depreciation of the US dollar; and, possibly, speculation (Baffes, 2011; ICAC, 2011).

Over the next few months, the price is expected remain at such heights, while, on the longer-term, prospects are more uncertain (World Bank, 2011). The question of the subsidies should therefore certainly not be ruled out. However, the outlook for commodity prices in general is better than it used to be, thanks partly to growth prospects in China and other emerging economies (Kaplinsky, 2006). As a result, the key question in the short to medium term has shifted. The issue now is to know whether African cotton producers are going to benefit from this favorable global price environment.

3. THE DOMESTIC DIMENSION

3.1 Global competitiveness: the importance of the supply elasticity²⁴

²³ According to Josling (2005), the impact of the Cotton Initiative on the conduct of Doha negotiations is in fact more ambiguous. While, on the one hand, the case has complicated the process by raising the stakes; on the other hand, by creating a successful precedent, it makes future cases more probable hence raising incentives for rich countries to cut support voluntarily.

²⁴ This section heavily draws on Shepherd and Delpeuch (2007).

Understanding the implications of recent global cotton market evolutions for African producers requires an appreciation of how these changes impact producer prices at the domestic level. Indeed, the more a world price increase is felt by farmers and the more they are able to address supply-side constraints; the greater is their gain. In addition, farmers' reactivity to price signals will be all the more important that a price rise will be short-lived, what can be expected as a result of the elimination of subsidies. Indeed, once American producers reduce their output, other producers worldwide will increase their own. The issue will then be the allocation of the market share given away by American producers among competing countries, even after the world price has adjusted.

Estimations of the impact for WCA of a removal of industrialized countries' subsidies provide a useful illustration of how the extent to which farmers are responsive to global price fluctuations impacts their ability to benefit from a higher world price. As shown by Shepherd and Delpeuch (2007), there is extensive disagreement amongst researchers as to the likely extent of those gains, with estimates varying by up to a factor of 20. There are, of course, many differences in approach amongst the sources they reviewed: the model structure, data sources, the base year, and other elasticities used.²⁵ However, uncertainty over the value of the supply elasticity in WCA, the parameter, which effectively summarizes the responsiveness of farmers to changes in world prices, is largely responsible for the great variation displayed in these estimates.²⁶

We can use the Goreux (2004) model to get an idea of the extent to which WCA's supply elasticity matters. It is particularly interesting to focus on the results of this paper as the C-4 used it (in its first version) as their reference to launch the Cotton Initiative at the WTO.²⁷ In that paper, the preferred estimates of C-4's potential gains from the elimination of industrialized countries' subsidies use uniform supply elasticities of 0.5.²⁸ Yet, reviewing what little is known about price responsiveness amongst WCA cotton farmers, Shepherd and Delpeuch (2007) conclude that it is likely to be lower. For instance, Gilbert & Modena (2004) and Shepherd (2006) find elasticities of between 0.1 and 0.2. Even the higher estimates of

²⁵ The base year is particularly important given the counter-cyclical nature of many support measures, which means that subsidies, and their impact, are the bigger, the lower the world price.

²⁶ Of the studies reviewed by Shepherd and Delpeuch (2007), only Gillson et al. (2004) and Araujo Bonjean et al. (2006) did their own econometrics to estimate WCA's cotton supply elasticity of. The remainder used estimates from previous studies, or consensus "guesstimates" based on a combination of literature-based analysis and professional judgment.

²⁷ It is beyond the scope of this paper to examine the accuracy of the Goreux (2004) estimate. It is simply taken as a useful baseline, and one which has been important in subsequent discourse. In light of the estimations performed since 2004, however, it seems that the estimated subsidy impact is surely on the high side (see Jales, 2010 for the most recent estimate).

²⁸ The paper estimates the impact of an elimination of subsidies in the US, in Spain and Greece and in China, estimated to a total of US\$ 6 billion in 2001/02.

Araujo-Bonjean et al. (2006) suggest that supply responsiveness in WCA lags behind that of other major producers. In terms of variation over time, identifying a clear trend is difficult. While Gillson et al. (2004) produce some evidence that WCA supply has become more elastic in the early 2000s; the conclusions of Shepherd (forthcoming) are more nuanced.²⁹

What happens, then if, in light of the evidence described above, the Goreux model is re-run assuming an elasticity of 0.1 instead of 0.5 for C-4 countries?³⁰ While in the original specification, the removal of industrialized countries subsidies led to a world price increase of 13.4 percent and a production increase of 6.5 percent in the C-4 countries, the production increase is of only 1.3 percent in the alternative scenario.³¹ As a result, the yearly increase in total producer income is only of about 15 percent instead of 20. In absolute terms this means that the annual producers' gain is just over US\$ 90 million instead of over 123.³² There can thus be no dispute that Africa's ability to benefit from changes in rich countries' cotton subsidies depends in part on the price responsiveness of its farmers.

3.2 Domestic regulation of cotton sectors in SSA³³

The producers' responsiveness to price incentives, and thus ultimately their competitiveness on the global market, is intimately tied to the question of domestic regulatory reform as sectoral institutions mediate between domestic and world markets and thus determine the speed and extent of price signal transmission.³⁴ Sectoral institutions also influence the elasticity of supply of producers in as much as they impact the supply-side constraints that producers have to deal with, among which, chiefly, difficulties to access inputs.

To grow cotton, farmers indeed need costly inputs but face strong cash constraints as credit markets are quasi non-existent in most of African rural areas. As a result, production overwhelmingly occurs through interlinked transactions whereby inputs are provided on

²⁹ According to him, whereas the average elasticity in Mali between 1990 and 2004 is slightly higher than between 1969 and 1989, it has nonetheless been trending downwards sharply since 1996 and the results are even starker once improvements in technology are netted out.

³⁰ The elasticity of 0.5 is maintained for the rest of the world.

³¹ The model is calibrated with price, production and subsidy data averaged over the 1999-2002 crop seasons.

³² The adaptation of the Goreux Model to multiple supply elasticities is given in Shepherd and Delpeuch (2007), Appendix 2, page 8.

³³ This section heavily draws on Delpeuch and Leblois (2011).

³⁴ The exchange rate between local currencies and the dollar, in which cotton is traded worldwide; transport costs and the efficiency of the companies which transform seed cotton into cotton lint (the ginners) also affect producer prices. See Baffes (2011) on the exchange rate and Delpeuch et al. (2011) as well as Tschirley et al. (2009) on transport and ginning costs.

credit by the ginning companies.³⁵ Because contract enforcement mechanisms are at best imperfect in many African countries, the structure of the market impacts the efficiency and the sustainability of input credit systems (Delpeuch et al., 2010; Poulton et al., 2004). The lower the degree of competition (i.e. the smaller the number of ginners willing to buy cotton from farmers), the less farmers have the possibility to ‘side-sell’, that is, to sell their cotton to other higher-bidding buyers at harvest, instead of to the company that has pre-financed their inputs.³⁶ The major advantage of a monopolistic market structure is thus to ensure the sustainability of input provision on credit (Delpeuch et al., 2010).³⁷

Traditionally, most African cotton sectors have been organized around state-owned enterprises enjoying both a monopsony for seed cotton purchase and a monopoly for cotton input sale.³⁸ This system implied that prices were fixed by governments or administrative bodies, and that sales were guaranteed for producers. However, such price setting mechanisms do not allow producer prices to reflect the fluctuations of the world price and thus distort production incentives (Baffes, 2009).³⁹ More specifically, state monopolies have historically been criticized for depressing farm gate prices. Figure 4 shows the average nominal rates of assistance (NRAs) to cotton producers in the C-4 and in four of the biggest cotton producers in ESA (Tanzania, Uganda, Zambia and Zimbabwe, hereafter referred to as the ESA-4 by analogy with the C-4) since the 1970s (Anderson and Masters, 2009).⁴⁰ The NRAs are calculated as the A-index net of estimated exchange rate distortions and freight, marketing, ginning and inland transport costs. During the years of widespread government intervention in price setting (i.e. until the mid-1990s), NRAs have on average been significantly negative everywhere in SSA, implying that farmers were taxed. Similar patterns of taxation have been observed for many other crops and especially exportable cash crops

³⁵ Among current significant producing countries, Tanzania is the only country where this is not the case at all

³⁶ Sectoral institutions are sometimes also praised for other benefits they offer to farmers. Price fixation throughout the year and the country has, for example, been heralded as a risk mitigation and spatial redistribution instrument (Araujo-Bonjean et al., 2003). Pan-territorial pricing schemes is however also considered to be ineffective in promoting rural development (Baghdadli et al., 2007). It is beyond the scope of this paper to discuss such issues.

³⁷ In WCA, where parastatals have had the longest history of existence, input provision schemes for cotton production certainly contributed to the rapid growth of cotton yields and production (Baffes, 2005).

³⁸ In some countries, these ‘parastatals’ or ‘boards’ also supplied services related to production and marketing including research dissemination, transport, ginning and exporting. Notably in ex-French colonies, these companies sometimes even provided public services in the rural cotton areas.

³⁹ Other criticisms pertain to the poor incentives monopolistic firms face in terms of efficiency (Tschorley et al. 2009).

⁴⁰ Over the past few years, total production was greater in Mozambique and Malawi than in Uganda, and, sometimes, in Zambia. However, the choice of the ESA-4 was guided by data availability.

(e.g. Bates, 1981; Krueger, Schiff and Valdes, 1988; van de Walle, 2001; Anderson and Masters, 2009; Bates and Block, 2010).⁴¹

Following recommendations by the World Bank and the International Monetary Fund (Badiane et al., 2002), African cotton sectors have however seen their share of reforms.⁴² Figure 5, which uses the database constructed by Delpeuch and Leblois (2011), depicts the proportion of competitive cotton markets in SSA countries in 1990 and in 2008. On the one hand, this figure shows that an increasing number of markets have become competitive; but on the other, it also points to the fact that, in many countries, markets remain non-competitive. Indeed, while many countries have undertaken reforms over the past two decades, the nature of these reforms has widely varied across regions, ranging from far-reaching market and price liberalizations, to only marginal adjustments.

Schematically, reforms have come in two waves: a first series of far-reaching reforms in ESA in the mid-1990s and a second series of more modest reforms in WCA in the course of the 2000s.⁴³ As illustrated in figure 6, a number of countries in ESA have privatized their parastatals, liberalized prices and allowed for competition.⁴⁴ Private stakeholders have however reacted to these reforms in different ways. While the Tanzanian cotton market is considered to be relatively highly competitive (Poulton, 2009); markets in Uganda, Zambia and Zimbabwe are said to exhibit lower degrees of competition (Brambilla and Porto, 2009; Poulton and Hanyami-Mlambo, 2009).

Resistance to market reforms has been much stronger in WCA, where the reforms implemented in the late 1990s and early 2000s have given rise to ‘hybrid markets’ characterized by regulation and mixed ownership (figure 7). While parastatals have often been privatized to some extent, including by allowing farmer associations to participate in ownership, competition has not been allowed. Where private companies are allowed to operate in addition to, or *in lieu* of the parastatals, they have been granted regional

⁴¹ The agricultural sector is known to be taxed for government revenue generation, industrialisation objectives and rent-seeking in developing countries (Bates, 1981, vande Walle, 2001). Besides, exported cash crops are considered to be a relatively easy target for taxation, because it is easier to control exports than domestic market products, and because there are no local consumers for whom prices should be kept low (see Swinnen, 2010 for a review of the political economy literature on agricultural and food policies).

⁴² Since the late 1980s, Africa’s ‘white gold’ as it is sometimes called has been at the centre of a harsh debate on how best its production can be encouraged and, particularly, on the role governments should play in this process.

⁴³ The geographical distinction between ESA and WCA in fact reflects more political/historical cleavages (Delpeuch and Leblois, 2011).

⁴⁴ Markets were liberalized in the Kenya in 1993; Malawi; Uganda, Zambia, Zimbabwe in 1994 and Tanzania in 1995. Similar reforms also took place in the mid-1980s in a small number of non ex-French WCA countries (Democratic Republic of the Congo in 1978; Ghana in 1985; Nigeria in 1986). See Delpeuch and Leblois (2011) for more details.

monopsony rights. Alternatively, production is administratively allocated among them (Delpeuch and Leblois, 2011; Baffes, 2009a). What is more, prices remain administratively fixed almost everywhere. The price fixation method has however been revised in some countries. Instead of being decided unilaterally by the state or the parastatals, prices are increasingly determined by inter-professional bodies, which include representatives of farmer, ginners, transporters and input providers. In Burkina Faso, a further step has been taken, one that could prove crucial in terms of price linkages (and is under consideration in neighboring countries): a price formula has been adopted, which should now explicitly link domestic prices to international prices.⁴⁵

The extent to which such regulatory reforms have increased farmers' responsiveness to world price signals remains uncertain: most reforms have been adopted only relatively recently and no estimations are available of the impact of reforms on producers' supply elasticity. Such evaluations would require an estimation of how they have impacted both price transmission and supply-side constraints.

Going back to the evolution of NRAs in figure 4, the first striking pattern is the strong and uniform decrease in taxation in WCA. Figure 4 even shows that WCA cotton farmers have been subsidized since the early 2000s. Such transfers to farms ultimately had to be covered by budget support to an extent that that is generally agreed to be unsustainable from a budgetary point of view (Baffes, 2009). This increase in NRAs in WCA is somehow surprising as reforms have been only modest in this region. It likely resulted from the fact that world prices have strongly declined since the mid-1990s, especially in CFAF (see figure 8), while governments in the region have not adjusted producer prices this world price downturn because of the significance of cotton revenues to large shares of their populations to the ginning sector, which is one of the primary industries, and to their economy as a whole.⁴⁶ Even in Burkina Faso, the low level of the world price (and national elections) led to the

⁴⁵ A first price is announced at the beginning of the season based on an average of the world price in preceding years. This price is paid to farmers upon delivery. Post-harvest, however, a new price is calculated based on the actual price received by ginners at the time they sell on the world market. If this second post-harvest price exceeds the pre-harvest forecast, the additional profits are allocated among ginners, farmers and a stabilisation fund according to pre-established shares. If, conversely, the post-harvest price is lower than the pre-harvest forecast, the ginners are compensated by the stabilisation fund. See Kaminski et al. (2011) for additional details on the functioning of this fund.

⁴⁶ Nubupko and Keita (2005) find that, in Mali, the negative macroeconomic impact of a 20 percent drop in producer prices would be bigger than the positive impact of the budget saving that would allow such a reduction. Besides, in general, agricultural support is known for its countercyclical nature (e.g. Gawande and Krishna, 2003; Swinnen, 2010). Indeed, exhibiting loss aversion (Tovar, 2009), governments tend to protect the sectors where profitability is on the decline. Besides, subsidization could be a consequence of the strong bargaining power of farmer associations and industrialists. According to Kaminski et al. (2009) or Bingen (1998), cotton farmers have indeed become particularly influential thanks to decades of information dissemination by cotton companies as well as financial and capacity-building support to producer associations by donors. External pressure by France might also have played a role according to Bourdet (2004).

misapplication of the price formula and the depletion of the recently created stabilization fund (Kaminski et al., 2011).

In ESA, the evolution is more contrasted between countries (figure 8) with a complete elimination of taxation in Uganda but less progress in Tanzania, Zambia and Zimbabwe and more variation in the latter two countries. The trends displayed in these three countries suggest that liberalizing cotton sectors does not automatically lead to competitive pricing and better price transmission between the domestic and the world markets. Possible explanations for such findings include the fact that, in Zambia and Zimbabwe, the degree of competition post-reform has increased only moderately (and fluctuated), notably as a result of the ability of a few historical firms to exert market power (Brambilla and Porto, 2009; Poulton and Hanyami-Mlambo, 2009).⁴⁷

In addition, as mentioned above, the ability of farmers to respond to price changes is also impacted by changes in input availability. In this respect, again, reforms have yielded diverging results. In WCA, first, because competition has not been introduced, no changes are to be expected. In ESA, the outcome seems to have depended on the degree of competition achieved (Tschirley et al., 2010). In strongly competitive sectors, input supply on credit has almost collapsed, while being sustained to a larger extent in less competitive markets (Tschirley et al., 2009).

The reaction of domestic markets to the current price increase should be revealing in several respects. In ESA, increased prices could lead to additional market entry and increased competition, with, on the one hand, larger price and supply responses, but, on the other hand, an increasing challenge to sustain input credit schemes. In WCA, the key question is whether higher prices will be reflected in producer prices through co-decision in price-fixing and the application of the pricing formula in Burkina Faso.

4. CONCLUSION: WHAT NEXT?

After years of diplomatic efforts and legal procedures, relief for African cotton producers might just have come from the market. While this does not mean that the elimination of rich countries' cotton subsidies should not be pursued anymore, on the contrary, it shifts priorities in the short run: governments in Africa have to concentrate on the functioning of their domestic markets to ensure that small-holder producers can respond to the current favorable global environment and benefit from higher domestic prices.

⁴⁷ The trend displayed for Tanzania is more difficult to explain as the degree of competition in the latter country is said to be the strongest. However, the figures are probably wrong (the ginning outturn ratio was forgotten in the formula, I should have the correct figures within 2 to 3 weeks).

In countries where reforms have been envisioned for several years, they must finally be implemented: governments now have the possibility to undertake reforms at a time when they would clearly benefit producers. Besides, while privatizations have sometimes been said to be hampered by the lack of interest of private agents, better price prospects should lift this constraint as investment in ginning facilities are relatively modest and can be recovered rapidly. In addition, where prices are fixed, they must reflect the current strong upward trend. Depoliticizing and introducing greater transparency in the regulation of the sector seems to be sine qua non condition for continued government intervention.

One could fear that by offering the perspective of new rent-seeking as well as scope for inefficient systems to be sustained, higher prices might in fact preclude change. It is to be hoped, however, that because farmers have been involved in regulatory reform processes as well as in the efforts to obtain higher prices on the international scene, the current price hike will not go unnoticed among them and their increasingly well-organized associations. In particular, the present favorable price environment offers the Burkinabe government, who has adopted the most ambitious reform in WCA, the opportunity to show that the heterodox market regulation system it has adopted, in which producers play an integral part, can deliver higher prices to producers when world market conditions are favorable. What happens in Burkina in the next few months will likely attract a lot of attention from neighboring countries, as well as from international institutions who support the sector.

Likewise, what happens in ESA competitive sectors will be crucial to our understanding of how private stakeholders respond to new market opportunities in African agricultural markets. The policy challenge, in these countries, lies in a more efficient regulation of markets that allows both for price competition and efficient coordination, an equilibrium that has proved difficult to sustain (Tschirley et al., 2010).

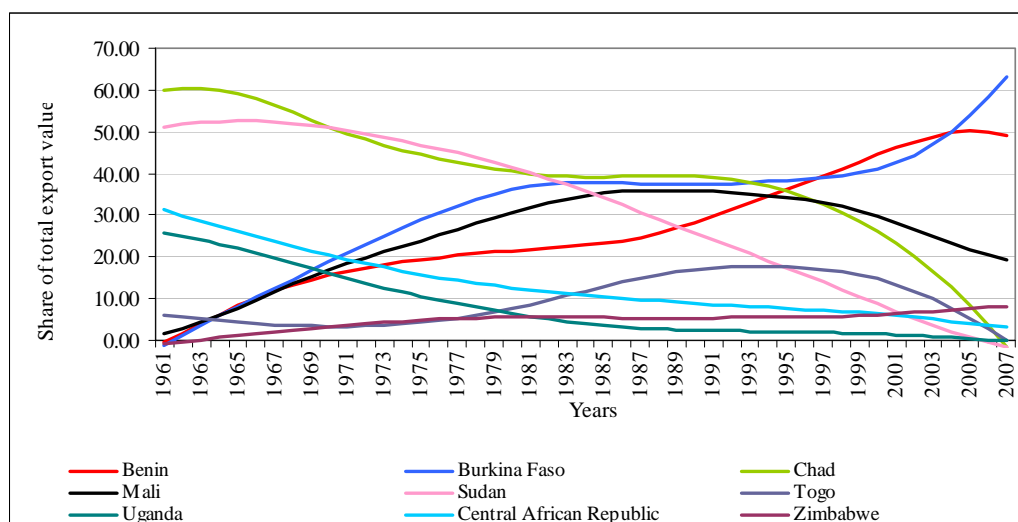
This time of high prices thus offers a window of opportunity to make cotton production a real poverty-reduction tool through policy changes at the domestic level. This is also the case at the global level. With better price prospects, the need for support in OECD countries is less stringent; governments should therefore take this opportunity to reform a system that was found to violate WTO legislation and to affect poor farmers worldwide. This would send a signal that the DDR can deliver on a strongly symbolic development issue at a crucial time in the history of the organization.

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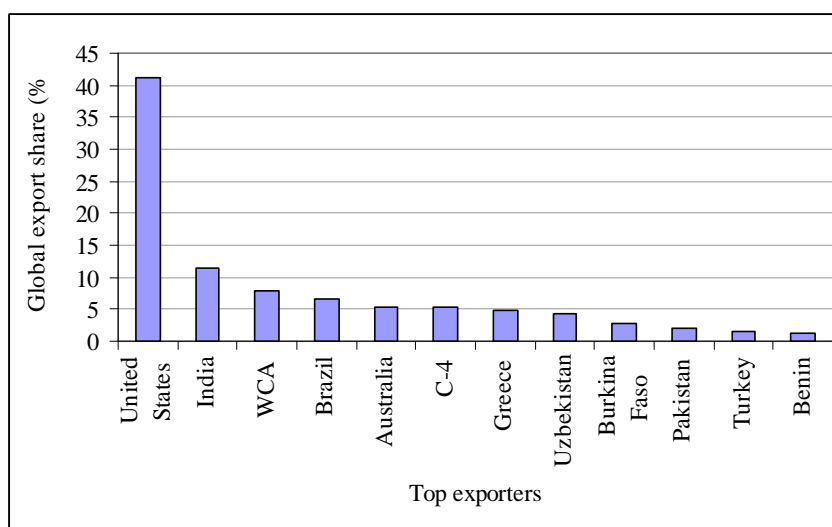
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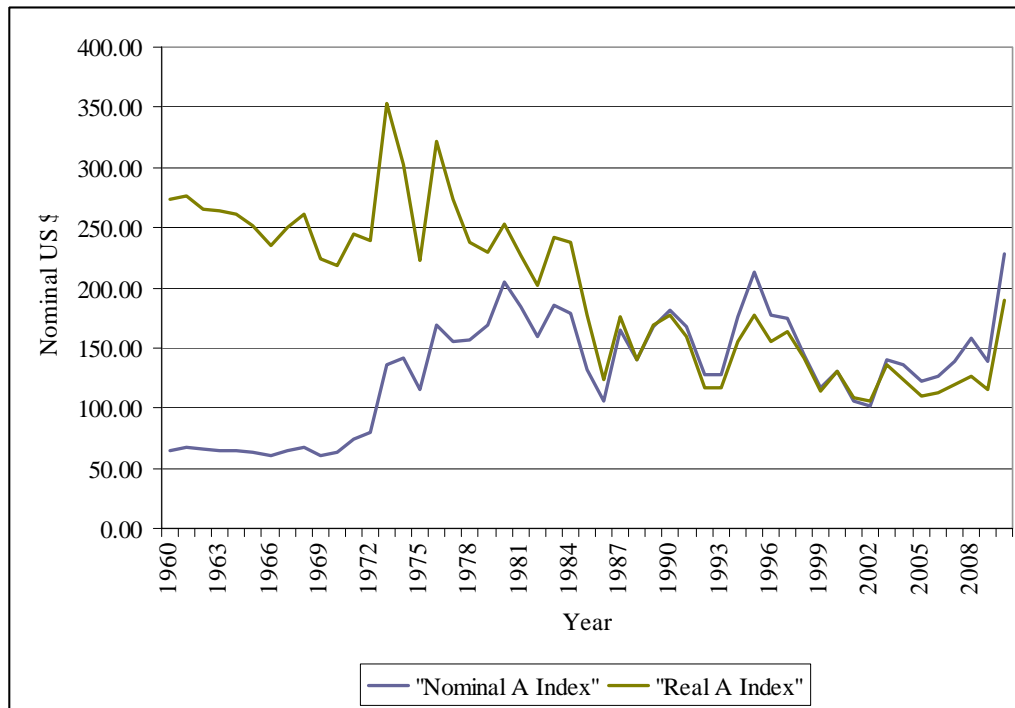
Figure 1. Cotton in total merchandise for selected SSA countries (1961-2007)

Source: FAOSTAT (January, 12, 2011). The data has been smoothed with a lowess factor of 0.8 for better readability.

Figure 2. Top cotton exporters in 2009

Source: UN Comtrade (January, 12, 2011)

Figure 3. The A index



Source: World Bank Commodity Price Data

Accessed, March 1, 2011: [http://blogs.worldbank.org/files/prospects/PINK_DATA\(3\).xls](http://blogs.worldbank.org/files/prospects/PINK_DATA(3).xls)

Box 1. Chronology of the ‘US-Upland Cotton’ dispute

- September 2002: Brazil requests consultations with the US regarding its cotton support program
- October 2002: Zimbabwe, India, Argentina and Canada request to join the consultation
- February 2003: Brazil requests the establishment of a panel
- March 2003: the DSB establishes a Panel
- September 2004: the Panel report is circulated to members
- October 2004: the US notifies their intention to appeal
- March 2005: the AB report is circulated to members and adopted by the DSB as well as the Panel report, as modified by the AB
- April 2005: the US announces its intention to comply with the rulings of the DSB
- July 2005: Brazil requests authorization to retaliate and the US objects this request
- August 2005: the US and Brazil jointly request the Chairman of the Arbitrator to suspend the arbitration proceedings
- October 2005: Brazil requests authorization to retaliate and the US object to this request
- November 2005: the US and Brazil jointly request the Chairman of the Arbitrator to suspend the arbitration proceedings
- August 2006: Brazil requests the establishment of a Compliance Panel
- December 2007: the Compliance Panel report is circulated to members
- February 2008: both Brazil and the US notify their decision to appeal
- June 2008: the AB report is circulated to members and adopted by the DSB as well as the compliance report, as modified by the AB report
- August 2008: Brazil requests the resumption of the two arbitration proceedings (to impose countermeasures of a total of about US\$ 4 billion)
- August 2009: the Decisions by the Arbitrator are circulated to members
- November 2009: Brazil requests and is granted the authorization to retaliate (for a total of about US\$ 830 million)
- December 2009: Brazil announces that it would impose countermeasures against US goods and services, including about US\$ 270 million in eligible cross-retaliatory countermeasures
- March 2010: Brazil releases a list of over 100 products that would be subject to countermeasures and announces the deadline of April, 6
- April 2010: the US offers an annual fund of almost 150 million to provide technical assistance and capacity-building for Brazil’s cotton sector as well as additional compensation on other agricultural products
- April 2010: a *Memorandum of Understanding* is signed by the US and Brazil and Brazil informs the DSB that the imposition of countermeasures is postponed and that it is negotiating with the US to reach a mutual satisfactory solution
- August 2010: Brazil and the US inform the DSB that they have concluded a Framework of Mutually Agreed Solution to the cotton Dispute in the World Trade Organization.
- As long as the Framework is in effect, Brazil will not impose the countermeasures authorized by the DSB.

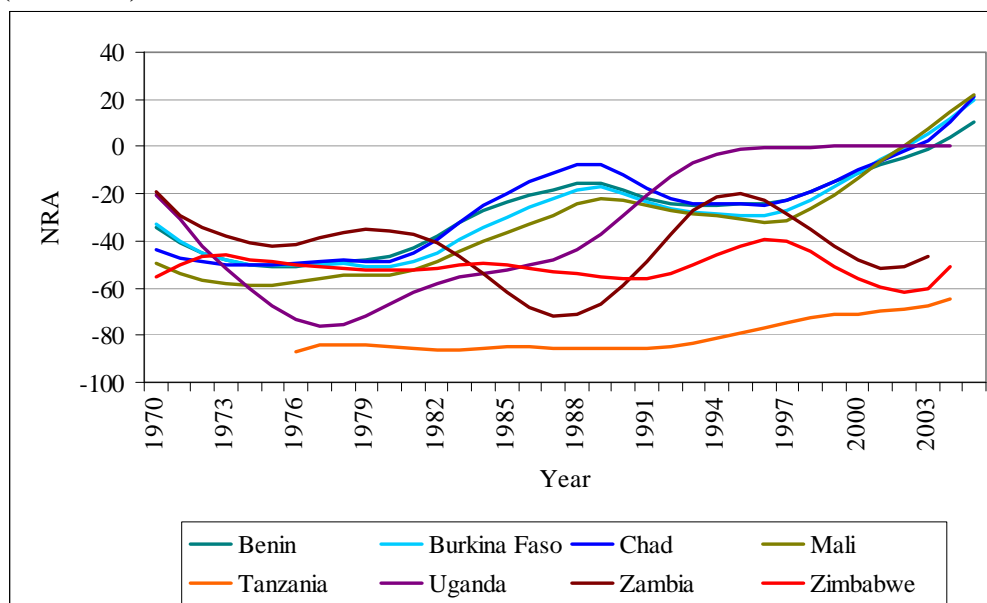
Sources: compilation by the author based on WTO summary of the case (WTO, 2010), ICTSD (2010 april and September), Schnepf (2010)

Box 2. Chronology of the ‘Coton Initiative’

- From February 2002: cotton producer associations in the C-4 begin raising the issue of US subsidies in public forums
- June 2002: agriculture ministers recommend the establishment of a regional strategy to defend their cotton interests during the conference of West and Central African Ministers of Agriculture in Abidjan
- April 2003: the Sectoral Initiative on cotton is launched in a Special Session of the WTO Committee on Agriculture
- June 2003: President Compaoré of Burkina Faso intervenes at the WTO Trade Negotiation Committee
- August 2003: the “Draft Decision Concerning Specific Measures in Favour of Cotton with a View to Poverty Alleviation” is submitted to the Chairman of the General Council
- July 2003: President Touré of Mali and president Compaoré publish an opinion piece in the NYT (first among three pieces on the topic in less than a year’s time)
- June 2004: President Touré testifies before the US House of Representatives International Relations Subcommittee on Africa
- July 2004: President Kérékou of Benin delivers a Memorandum on cotton to President Bush of the US on a visit to Senegal
- July 2004: the WTO director-general recognizes the importance of the cotton issue and pledges that it would be addressed “ambitiously, expeditiously and specifically, within the agriculture negotiations” (WTO 2004)
- November 2004: the WTO establishes a sub-committee on cotton in the agricultural negotiations
- January 2011: ACP countries pledge against the issue of the ‘US-Upland Cotton’ dispute and re-state the demand of the C-4.

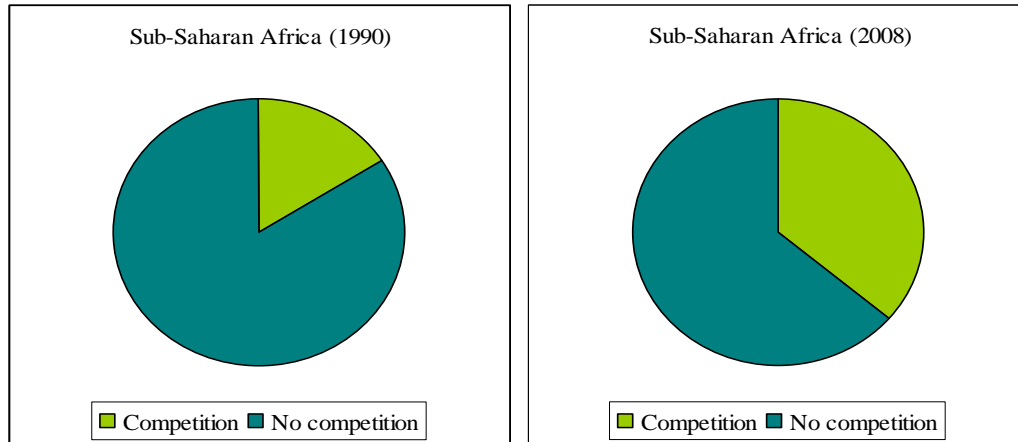
Sources: compilation by the author based on Eagleton-Pierce (forthcoming), Heinisch (2006), ICTSD (nov, 2010)

Figure 4: Nominal rates of assistance to the cotton sector in C-4 and ESA-4 countries (1970-2005)



Source: Anderson and Valenzuela (2007). The data as been smoothed with a lowess factor of 0.4 for greater readability.

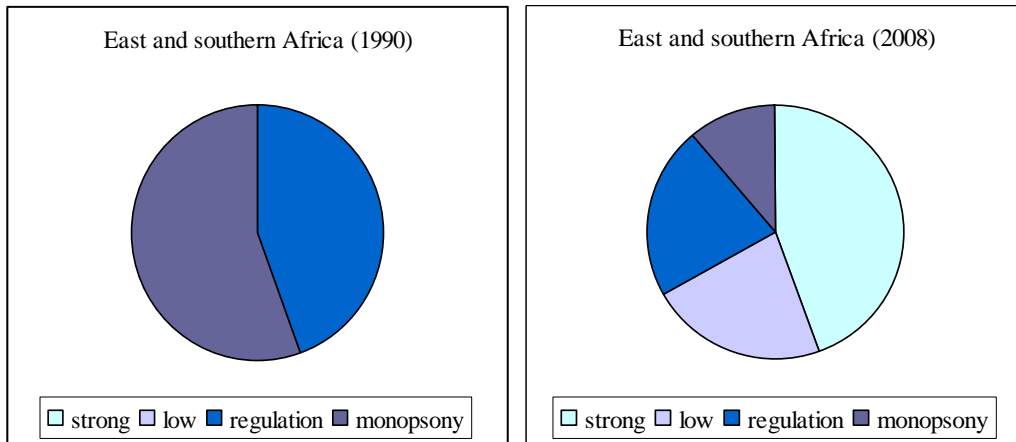
Figure 5: Competition in SSA (1990, 2008)



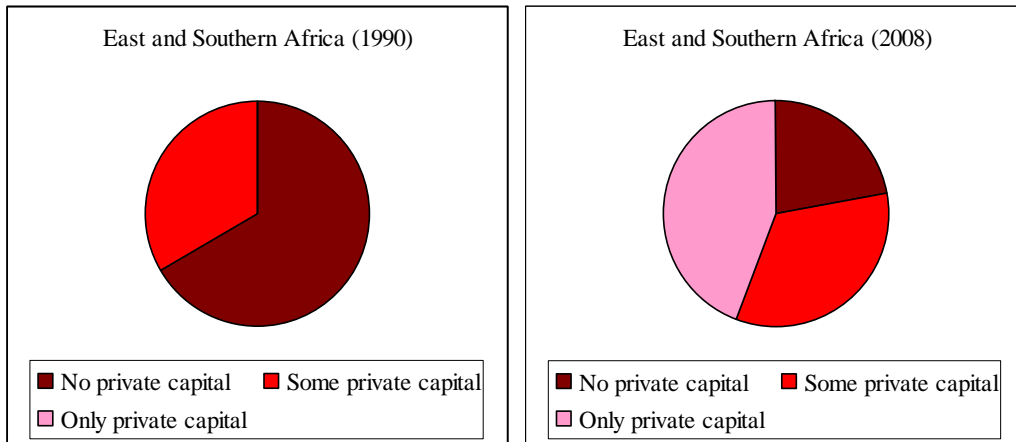
Source: Delpeuch and Leblois (2011)

SSA includes Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Democratic Republic of the Congo, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Kenya, Madagascar, Malawi, Mali, Mozambique, Niger, Nigeria, Senegal, Sudan Togo, Uganda, United Republic of Tanzania, Zambia and Zimbabwe.

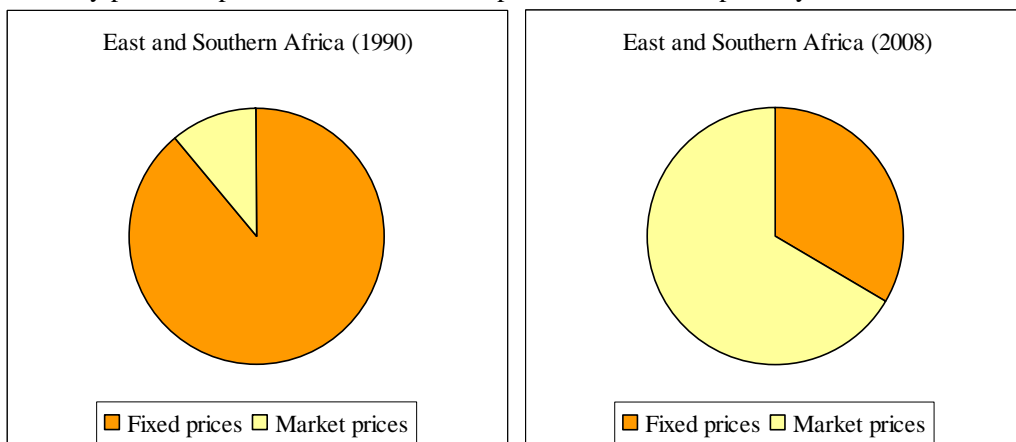
Figure 6: Market organisation in ESA (1990, 2008)



Competition is 'strong' if many firms compete on prices and 'limited' if 2 or 3 firms exert price leadership. 'Regulation' reflects regional monopolies or administratively allocated supply.



'Some private capital' implies that some of the ginning companies have opened up ownership to private investors. 'No private capital' implies that the State is sole owner of all the ginneries and 'only private capital' that the state is not part of the ownership of any of them.

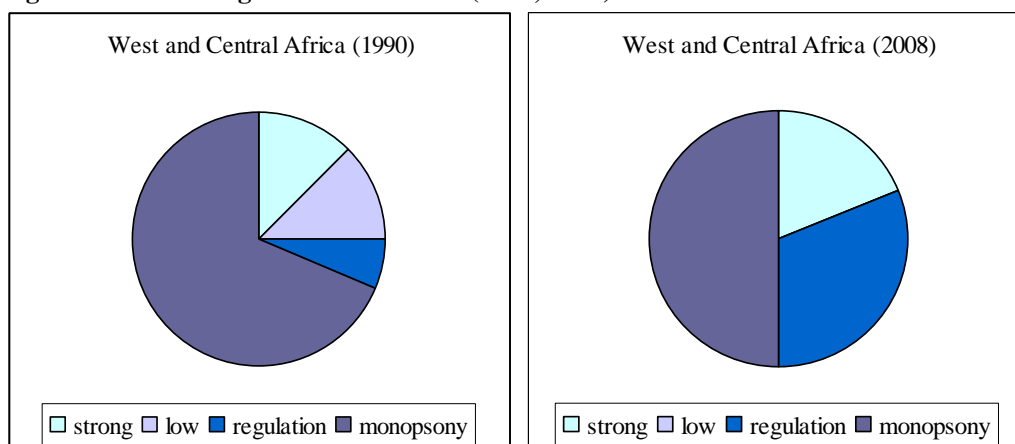


'Market prices' indicates that prices exclusively reflect market forces. 'Fixed prices' implies that the state or a public agency fixes prices throughout the year and the country.

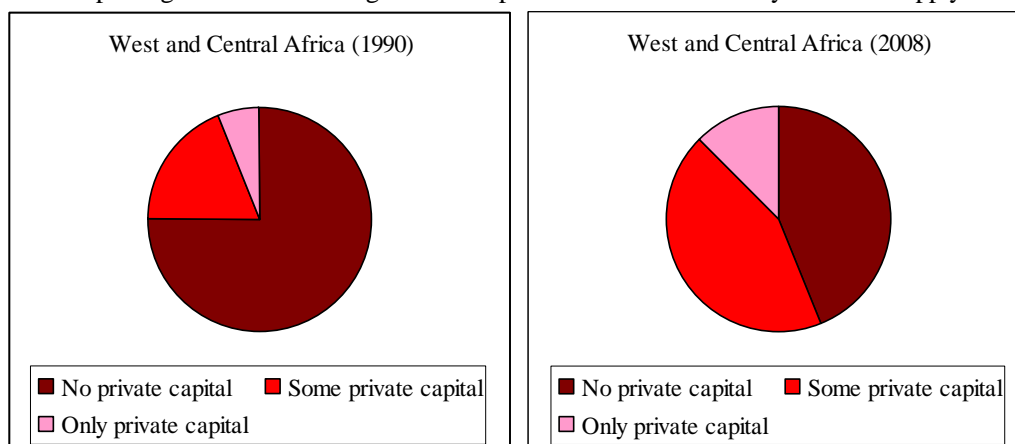
ESA includes Kenya, Madagascar, Malawi, Mozambique, Sudan, Uganda, Tanzania, Zambia and Zimbabwe

Source: Delpeuch and Leblois (2011).

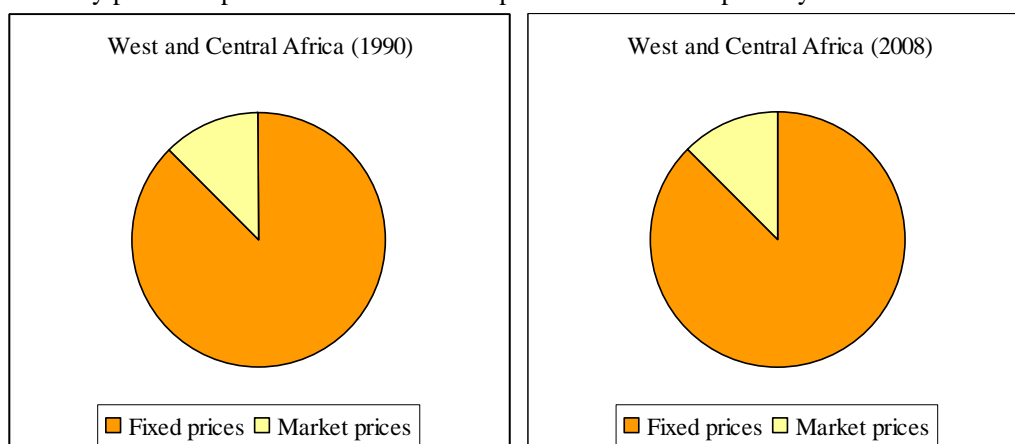
Figure 7: Market organisation in WCA (1990, 2008)



Competition is 'strong' if many firms compete on prices and 'limited' if 2 or 3 firms exert price leadership. 'Regulation' reflects regional monopolies or administratively allocated supply.



'Some private capital' implies that some of the ginning companies have opened up ownership to private investors. 'No private capital' implies that the State is sole owner of all the ginneries and 'only private capital' that the state is not part of the ownership of any of them.

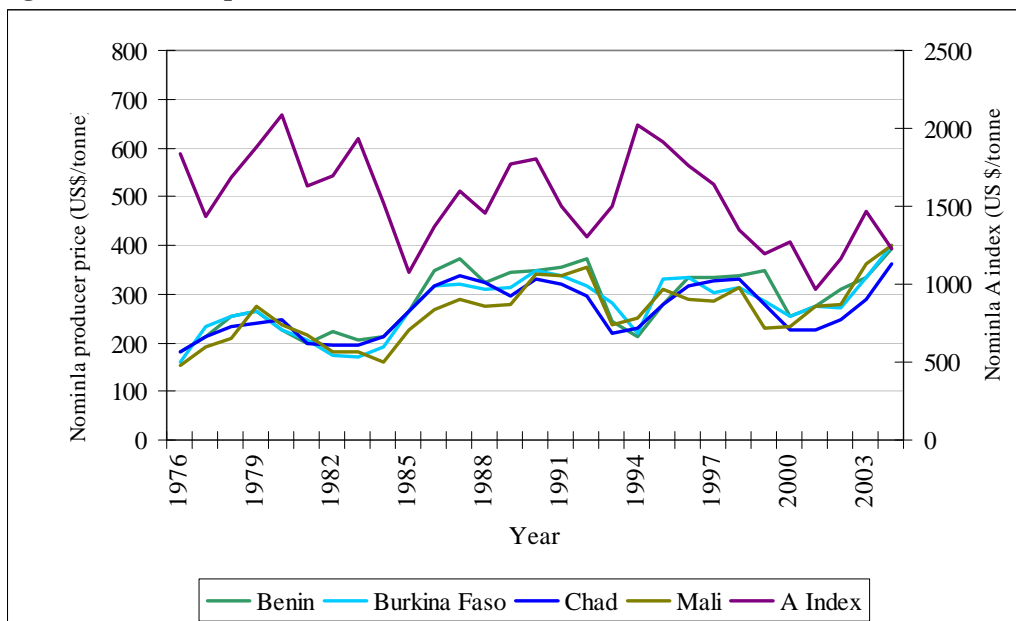


'Market prices' indicates that prices exclusively reflect market forces. 'Fixed prices' implies that the state or a public agency fixes prices throughout the year and the country.

WCA includes Benin, Burkina Faso, Cameroon, Central African Rep., Chad, Dem. Rep. of the Congo, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Mali, Niger, Nigeria, Senegal and Togo.

Source: Delpuech and Leblois (2011)

Figure 8: Producer prices in the C-4 and the A index, real CFAF (1976-2004)



Source: Baffes (2007)